

Success Story

PMC Groundwater Superfund Site



PMC Groundwater Superfund Site
Petoskey, Michigan
October 2010
FINAL

U.S. EPA Region 5

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Developed for EPA Region 5 by E² Inc.

Executive Summary

The Petoskey Manufacturing Company (PMC) in Petoskey, Michigan was located in an industrial area on the shores of Lake Michigan’s Little Traverse Bay. PMC improperly disposed of solvents used in die casting at the plant, contaminating ground water and the town’s municipal well. This case study highlights how the U.S. Environmental Protection Agency (EPA), the Michigan Department of Natural Resources and the Environment (MDNRE), the City of Petoskey and local developers collaborated on the cleanup and redevelopment of the PMC Site and surrounding waterfront area. This collaboration and persistence, combined with the city’s visionary planning efforts and creative financing strategies, transformed the former contaminated industrial zone into a vital recreational waterfront.

EPA and MDNRE made it a priority to work with the City of Petoskey to design cleanup activities to be compatible with the future vision for the community while still achieving the objectives of the cleanup. While discussions continue regarding potential improvement to the PMC Site, the cleanup and redevelopment of the Site helped to revitalize the community in many ways. The number of visitors that come to enjoy Petoskey’s lakefront scenery and recreational amenities has significantly increased in recent years, and the taxable value of the PMC Site has multiplied 15 times from when the PMC facility was in operation in the 1960s.



Introduction

Located on the shores of Lake Michigan’s Little Traverse Bay, the City of Petoskey, Michigan is a vibrant community and popular resort surrounded by natural beauty and year-round recreation. The community is recognized nationally as a “best small town” and a “best place to retire”. The town has a well-established full-time population of about 6,000, but draws thousands of visitors every year to enjoy the lakefront scenery, festivals, recreation and the century-old buildings downtown. The city’s waterfront area has undergone a major transformation over the last twenty years from an industrial corridor to a welcoming public space, which has helped to boost the number of visitors that come to enjoy Petoskey. Part of this transformation was the cleanup and redevelopment of the PMC Groundwater Superfund Site (PMC Site or Site).



Figure 1: Site vicinity map

This case study explores the partnerships and key factors that led to the cleanup and reuse of the PMC Site. In particular, the case study discusses the evolution of remediation and redevelopment efforts, and ongoing reuse activities at the Site. The report outlines lessons learned identified by the local, state and federal representatives involved in the project. While discussion continues regarding potential remedial improvements to the Site, the reuse of the PMC Site has resulted in regional economic revitalization due in part to collaboration on cleanup and redevelopment activities.

Site Description

The PMC Site is located within the City of Petoskey, Emmet County, Michigan. The Site consists of several units, including the former Petoskey Manufacturing Company (PMC) property, the City of Petoskey's former Ingalls Municipal Well and the portion of the city's Bayfront Park West that surrounds a contaminated ground water plume. The Site boundary shown in Figure 1 is approximate and not meant to indicate the extent of contaminated ground water.

The former PMC facility was located at 200 West Lake Street in what is currently a residential area of the City of Petoskey. The former PMC facility is bordered to the north by the Sunset Shores condominium complex, to the east and south by several residences and to the west by a 100-foot wide access easement to Bayfront Park West and the Fraternal Order of Eagles (FOE) parking lot. Little Traverse Bay of Lake Michigan is approximately 500 feet north of the PMC property. Bear Creek, which drains into Little Traverse Bay, is located approximately 500 feet east of the PMC property.

Site History

The land between the former PMC facility and Little Traverse Bay was once occupied by a large industrial rail yard, which included oil, coal and propane storage facilities, and a rail turntable. A manufactured gas plant was located to the northeast in an area formerly known as the Petrolane Site. This area is now a public park called Festival Place. Figure 2 shows an aerial photo of the site thought to have been taken in the 1940s. Land use at the site today is entirely residential and recreational.

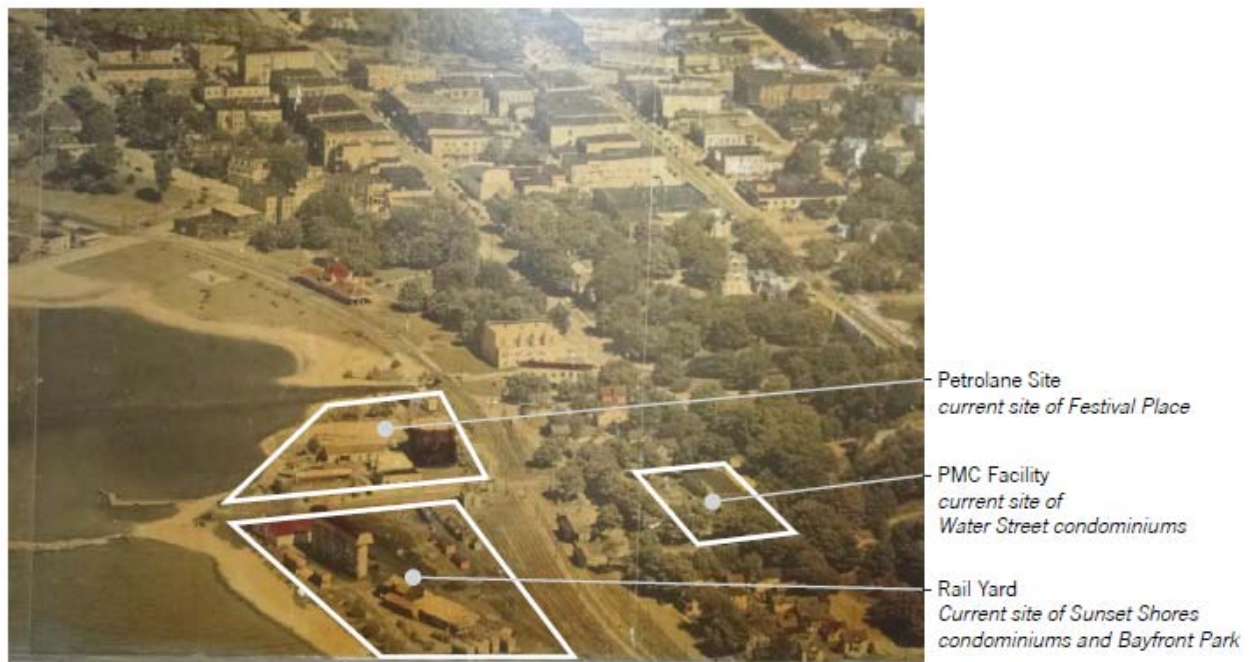


Figure 2: Aerial photo thought to be from the 1940s showing the former PMC building and the Petrolane manufactured gas plant. A rail yard and coal storage sit on the current location of the Sunset Shores condominiums and Bayfront Park West. Today, Water Street and the new bike path run along the easement of the former main rail line. (Source: City of Petoskey)

Planning for Redevelopment

A proposal from a private developer provided the catalyst to initiate the first cleanup and redevelopment activities in the area. The developer saw residential potential in the former propane storage property, but was not willing to invest so long as the Petrolane manufactured gas plant remained in place across Wachtel Ave. The city submitted an offer to the Petrolane Company to move their facility. The offer consisted of a new 4-acre site south of town, construction of a new rail



The former Petrolane Site is now a public park called Festival Place.

Petoskey Manufacturing Company

PMC was established in 1946 as a small fabricating and painting operation. The company performed a die casting of zinc parts for the automotive industry from the late 1960's up to fall 2000 when the business closed. The primary product line included door handles, hood ornaments and emblems. Molten zinc was cast into parts and then trimmed, polished, buffed and painted as necessary. Trichloroethylene (TCE) was used as a solvent to clean paint masks. Xylene was used as paint thinner and solvent.

siting and the \$280,000 reserved in the city's Beach Fund. As soon as the city demonstrated their commitment to restoring the Petrolane property, the developer moved forward with construction of the Sunset Shores condominiums. The Michigan Department of Natural Resources and the Environment (MDNRE) funded three phases of remediation on the Petrolane Site to enable the area to be used for public recreation.

The successful cleanup and redevelopment of the Petrolane Site opened the city's eyes to the possibilities of redeveloping other areas of the waterfront. City staff and officials realized that redevelopment of the waterfront for recreational and residential use could encourage more private investment and raise real estate values. In 1981, the city established an official Waterfront Redevelopment Plan to guide the redevelopment efforts in the waterfront district.

History of Remediation

Contamination at the PMC Site was first discovered in September 1981 when drinking water samples from the Ingalls Municipal Well revealed high levels of volatile organic compounds (VOCs) and inorganic contaminants. The City of Petoskey requested assistance from MDNRE in identifying responsible parties and in finding the source of the contamination. MDNRE conducted soil sampling at the PMC facility in 1982 and found high levels of several chemical

contaminants. Small amounts of TCE breakdown products were also found in monitoring wells near the former PMC property.

MDNRE determined that in its operations, PMC had disposed of spent solvents directly to the ground surface surrounding the plant. For this reason, EPA and MDNRE identified PMC as the source of the city's ground water contamination.

In 1982, under the direction of the MDNRE, PMC performed a Time Critical Removal of contaminated soils from a portion of the Site. EPA evaluated the PMC Site and added it to the National Priorities List (NPL) on September 8, 1983. Following the removal of the contaminated soil, TCE concentrations in the Ingalls Well decreased significantly from 50 part per billion (ppb) to approximately 4.0 ppb. TCE concentrations remained relatively stable in the 1 to 3 ppb range until monitoring ended.

In 1987, PMC signed an Administrative Order by Consent (AOC) with EPA agreeing to conduct a full Remedial Investigation and Feasibility Study (RI/FS). After several delays due to PMC's financial limitations, EPA relieved PMC of conducting the RI/FS work in 1990 and entered into a State Cooperative Agreement with the MDNRE to perform the RI with funding provided by EPA.

Concurrently with the state-led RI, EPA began a Focused FS to examine the impact of site-related contamination on the Ingalls Well. In 1995, EPA signed an Interim Record of Decision (ROD) for providing on-line treatment of ground water at the Ingalls Well. The State of Michigan requested that construction of a new drinking water source be considered instead of the selected remedy due to the likelihood that water from the Ingalls Well would need additional treatment. EPA agreed to forgo the selected remedy and contribute the capital costs to the city to partially defray the cost of replacing the Ingalls Well. The State of Michigan contributed \$500,000 in grants for the development of the alternative water supply. In late 1995, the City of Petoskey completed the construction of its replacement municipal wells and use of the Ingalls Well ceased.

Remedial Timeline

1981: PMC identified as a PRP by EPA and MDNRE

1982: Time Critical Removal of contaminated soil from the west side of the PMC building

1983: Site listed on EPA's National Priorities List

1995: First Record of Decision (ROD) signed for providing on-line treatment of ground water

1996: City completed construction of replacement municipal water source and use of Ingalls Well ceased

1998: MDNRE completed the Remedial Investigation; EPA completed the Feasibility Study

1998: Second ROD signed for the soil and final ground water remedies

1999: PMC filed for bankruptcy and closed

1999: On-site construction starts

2000: Preliminary Close-out Report signed

2005: Restrictive Covenant for former PMC property approved by MDNRE and filed with Emmet County

2006: Ingalls Well demolished by City

2007: Replacement monitoring wells installed and EPA declares PMC Groundwater as Site Wide Ready for Anticipated Use (SWRAU)

In September 1998, EPA issued another ROD to select the remedies for soil and ground water at the Site. The remedies included:

- Excavation and off-site disposal of the contaminated soil that exceed MDNRE’s residential direct contact criteria and Ground Water/Surface Water Interface (GSI) protection criteria for protection of surface water used as a drinking water source.
- The installation and operation of a Soil Vapor Extraction (SVE) system to remove volatile organic compounds (VOCs) from subsurface soils.
- Monitored natural attenuation (MNA) of the ground water, which included the development of a Ground Water Monitoring Plan (GWMP), followed by installation of a monitoring well network, an initial three year period of quarterly monitoring, and then ten years of long-term monitoring.
- Establishment and maintenance of Institutional Controls (ICs) to prohibit future use of the ground water on the former PMC Property. ICs consist of a Restrictive Covenant prohibiting contact with soils or use of ground water on the former PMC property and a municipal ordinance prohibiting the construction of wells or use of ground water in the area that exceeds ground water cleanup standards.
- Development of a plan for a contingency remedy, and development of a monitoring well abandonment plan.

With the known PMC soils having been addressed by SVE and excavation, EPA expected the residual contaminated ground water to naturally attenuate. A Preliminary Close-Out report was signed on February 18, 2000 indicating the remedial construction activities were complete at the Site. With construction complete and ICs in place, EPA declared the PMC Groundwater Site as Site Wide Ready for Anticipated Reuse (SWRAU) on December 17, 2007.



A flush mounted monitoring well located in Bayfront Park

Remedial Considerations

While the remedy currently remains protective of human health and the environment, TCE concentrations continue to exceed MCLs and there is no clear indication that contaminant concentrations in the ground water plume are declining. MDNRE and EPA continue to discuss additional remedial implementation, including revisions to the monitoring plan and monitoring well network, potential contingency remedies and ICs, investigation into remaining contamination, including zinc, and long-term maintenance options.

Agency Collaboration and Support

MDNRE and EPA made innovative efforts to best utilize funds and speed up the cleanup (both during Remedial Design and during field work). For example, EPA and MDNRE agreed that preparation of a Quality Assurance Project Plan (QAPP) and the implementation of verification sampling would not be necessary if areas that exceeded direct contact criteria were over-excavated. By drawing the excavation boundaries with sufficient conservatism, the agencies could feel assured that these areas had been sufficiently remediated.

MDNRE and EPA also worked together to modify cleanup standards to allow for the greatest flexibility in future reuse of the Site. Considerations of future use are an integral part of EPA's Superfund program to ensure that contamination is not a barrier to reuse of a property. Despite the fact the PMC property was zoned for industrial reuse, EPA agreed to MDNRE's request to modify cleanup standards from industrial to residential reuse criteria since the Site was surrounded by existing residences and the city anticipated future residential redevelopment of the property.

Finally, EPA consented with MNDRE's recommendation to purchase and develop an alternative municipal water supply for the City of Petoskey.

Developing an Alternative Water Supply

Contamination was discovered in the Ingalls Well in 1981. After 10 to 12 years of searching for an alternative water source, the City was about to go forward with the development of a surface water plant when another option emerged. The developer of a proposed golf resort and conference center needed water supply sooner than the expected surface water treatment plant and invested in a search for ground water closer to the proposed development site. To everyone's surprise, he found ground water of adequate quality and quantity.

The City worked out an arrangement to purchase the two wells that had been installed from the Bay Harbor Company for \$2,885,000. The City updated the wells to municipal standards, developed a third well, upgraded the distribution system, installed 5 miles of pipeline, created a wet well that accepted the water from Bay Harbor, and then renovated the pumping system to redistribute water throughout the City. The State of Michigan contributed \$500,000 in grants towards the construction of the alternative water supply. The project, which took a total of \$7 million, was completed in 1996. The alternative plan, the construction of a lake water treatment plant, would have cost closer to \$15 million with higher annual expenses for operation and maintenance.

George Korthauer, the City Manager at the time, remembers that "the Bay Harbor option emerged at a crucial time for the City. It was no secret that the City needed water, and Bay Harbor had the City in the perfect spot to sell water to the City, but we were able to get it worked out to the City's advantage".

Brownfield Redevelopment Authorities

In the State of Michigan, a local governing body may establish one or more Brownfield Redevelopment Authorities and create and implement a brownfield plan that identifies the properties from which taxes will be captured and where eligible activities will be conducted. BRAs may only exercise powers on eligible property within the jurisdiction and may only capture taxes from approved brownfield sites that the municipality authorizes. States may require state approval of the brownfield plan and approved brownfield projects are also eligible for other incentive programs.

(Source: Citizens Research Council of Michigan, Survey of Economic Development Programs in Michigan, June 2007)

History of Redevelopment

In 1984, the city came up with a method to finance their redevelopment plans for the waterfront district. The city established a tax increment finance authority (TIFA) and a tax increment financing (TIF) district to capture of property tax levies above and beyond the year in which the TIFA was established. The city used the initial revenue to recover costs from the cleanup and redevelopment of the former Petrolane Site, beyond the remediation funded by MDNRE in the early 1990s. The subsequent increment generated by the Sunset Shores condominiums, which was significant, was used to fund further waterfront improvements.

In 2000, the state awarded the City of Petoskey a Clean Michigan Initiative Waterfront Redevelopment Grant. This provided approximately \$500,000 for demolition and \$100,000 for acquisition of the PMC Site. The grant posed one particular challenge; it was specifically designed for industrial or commercial brownfield redevelopment, which no longer matched the city's

zoning or desires for the property. After the city successfully made the case that resort tourism was the most valuable industry in the area, the state agreed to a predominantly residential brownfield redevelopment plan with a small commercial component. The city rezoned the property as a Planned Unit Development (PUD) in order to incorporate the small commercial component needed to meet the state's grant program requirement.

After resources available from the state and EPA for cleanup were exhausted, and monitoring wells were all that remained on the Site, the city formed a local Brownfield Redevelopment Authority (BRA) to



The former PMC facility (Source: City of Petoskey)



The Water Street condominiums with improved road (Wachtel Ave) and integrated utilities

help develop a plan for the Site's redevelopment. A BRA allows a local government to use TIF revenue for environmental remediation of brownfield sites, which can provide an added incentive to private entities for redeveloping a site.

In April 2003, the former PMC facility was sold through Chapter 7 Bankruptcy Trustee to Perazza Products, LLC, a Michigan developer. In July 2004, the developer demolished the existing building, including its foundation and removed contaminated soils. The construction of the new residential condominium buildings, called the Water Street Condominiums, started in September 2004 and continued until 2008. Ten of the 16 condos were completed before the property went into foreclosure in the fall of 2009.

Financial assistance was an important driver for the developer. The developer relied on approximately \$150,000 in compensation from the BRA to offset \$350,000 in cleanup expenses. The developer also depended on a Small Business Tax Credit from the Michigan Economic Development Corporation for construction of the condominiums.

Redevelopment of the Surrounding Waterfront District

During the time the city was searching for another water source, the Water Department purchased the land west of the Sunset Shore condominiums and east of the Ingalls Well pump house for use as a reservoir. The city considered development of a water intake from the lake or a water treatment plant on this property before reaching an agreement to purchase the new wells installed by the Bay Harbor Company.



The City of Petoskey has invested considerable resources in planning and designing recreational improvements along the waterfront. The City's latest effort involves recreational improvements along the Bear River which extends south from Bayfront Park. The Bear River Valley is characterized by natural forests and open space areas that are rich in plant species and local history.

In 2005, the City of Petoskey began a two-year project to rebuild and re-landscape streets, utilities and additional waterfront parkland. The work included street rerouting and repaving, and relocation of electric and cable utilities underground. Since the lakefront property west of Sunset Shores was no longer needed for a reservoir or water treatment plant, the city converted the property to what is now the popular Bayfront Park West. The park area was significantly re-graded and a new storm drainage and underground sprinkler system was installed.



Bayfront Park

The city's waterfront redevelopment activities also resulted in the conversion of a public street to a bicycle and pedestrian right of way. The bicycle / pedestrian path created a connector between two portions of the Little Traverse Wheelway, a 26-mile trail that stretches along Little Traverse Bay from Harbor Springs through Petoskey and down to Charlevoix. The trail is part of the North County Trail, a National Park Service designated scenic trail which extends from Pennsylvania to South Dakota. The Michigan Department of Transportation (MDOT) financed the majority of the trail construction in Petoskey, from Bay Harbor to Bayview, with the city completing a half-mile segment.

Waterfront Redevelopment History

1981: Waterfront Redevelopment Plan created

1985: Tax Increment Financing District established

1999: Emmet County Brownfield Redevelopment Authority (BRA) established

2000: First PMC Brownfield Plan approved; made site eligible for Tax Increment Financing (TIF)

2000: MDNRE granted the City a \$597,500 Clean Michigan Initiative Waterfront Redevelopment Grant (WRG) (\$497,500 for demolition; \$100,000 for property acquisition)

2002: MDNRE agrees to City's request to remove WRG requirement for a Prospective Purchaser Agreement (PPA) with EPA

2003: Developer submitted a revised Brownfield Redevelopment Plan; Developer Agreement approved by the BRA

2003: Developer requests property rezoning from I-1 Light Industrial to a Planned Unit Development (PUD); City Council unanimously approves

2003: Developer submits a Baseline Environmental Assessment and Due Care Compliance Analysis for the former PMC property to MDNRE

2004: Developer demolished building, removed contaminated soils and started construction; City starts construction of Bayfront Park and surrounding infrastructure improvements

2007: Construction of 10 of the 16 residential units and one commercial space complete; Reconstruction of Bayfront park and city improvements complete

2010: Developer reimbursed by BRA for eligible cleanup expense of PMC site

Although some components were modified, the Waterfront Redevelopment Plan is currently in place as it was originally intended 25 years ago.



Water Street right-of-way before redevelopment. (Source: City of Petoskey)



Water Street right-of-way redeveloped as a bicycle / pedestrian path called the Little Traverse Wheelway.

Overcoming Challenges to Redevelopment

The redevelopment of the PMC Site and waterfront district was not without local controversy. The city had difficulty getting community buy-in and support from older generations who considered the waterfront district an area that should be redeveloped to support the city's industrial future. The city was blamed at one point for causing the PMC to go out of business. George Korthauer, the former City Manager, remembered that the City Council decision to acquire the Petrolane Company Site came down to a 3 – 2 vote: "If that vote had fallen the other way, the area would not be improved as it is today. The city having the ability to get that industrial use out of the waterfront is what enabled the area to turn the corner in terms of redevelopment".

The previous name of the Site caused concern in the community and created a number of public relations problems for the city. When the Site was placed on the NPL, the site name was changed from the *Petoskey Manufacturing Company Superfund Site* to the *Petoskey Municipal Well Field*. In 2007, EPA recognized the name unfairly stigmatized the City of Petoskey, which was never a potentially responsible party, and changed the site name to *PMC Groundwater*.

The city acknowledges that coordinating infrastructure improvements with the condominium construction was often a challenge, especially due to frequent turnover of the developer's onsite project management staff. The city, however, kept constant pressure on the developer to complete the slabs and foundations so the city could finish construction of public improvements on the Site's perimeter. If it were not for the city's need to coordinate activities, the Site may not be in the finished state it is today. While the city anticipates the vacant building pads on the PMC site will remain vacant until economic conditions improve, the city, state and EPA are assured that the soil caps are in place and the infrastructure is installed and ready for the economy to rebound.

Components of Success

Participants involved in the PMC Groundwater Superfund Site agree that a combination of factors contributed to the Site's cleanup and successful redevelopment.

- The city had a strong vision for residential and recreational use of the waterfront district in place, which helped to guide cleanup standards and reuse activities. Amy Tweeten, the current City Planner remarked that, “the city stuck to the Plan, and despite challenges from potential funding sources and the volatility of developer investments in the area, the city stuck to it and kept chipping away at it.”
- The city had visionary and persistent leadership from city staff and elected officials. The main designer of the Waterfront Plan was involved since the inception of the plan, providing institutional knowledge and continuity throughout the project.
- The local government put together a variety of funding mechanisms to support redevelopment of the waterfront district over the years, including the creation of a BRA and TIF, the Small Business Tax Credits from the Michigan Economic Development Corporation, the Waterfront Redevelopment Grant from the Clean Michigan Initiative and trail funding from the MDOT.
- The Site is located in an area that is well suited for residential and recreational use, and the market responded positively to improvements made in the area.
- EPA and MDNRE selected and implemented a remedy for the Site that would be consistent with the property's reasonability anticipated future use.
- The State of Michigan worked extensively with the city and the developer to provide state grant funding and coordinate redevelopment efforts with remediation efforts.



Vacant building pads serve as soil caps, an essential component of the site remedy

Conclusion

The redevelopment of the PMC Groundwater Site illustrates how community visioning, dedicated leadership, state and federal funding opportunities, collaborative partnerships with EPA and MDNRE, and flexible long-term planning can result in local economic redevelopment and community

revitalization. The city recognized that the cleanup represented an opportunity to revitalize the downtown area in a way that was aligned with their long-term vision for the waterfront district. The city, in partnership with EPA and MDNRE, has realized their vision for restoring the natural setting along the lakefront, enhancing outdoor activities and bolstering the recreational culture of the area. Public and private investment in the area has significantly increased the number of visitors every summer that come to enjoy Petoskey's lakefront scenery and recreational amenities. Today, the financial rewards of this investment are great. The taxable value of the PMC Site is now almost \$1.5 million, compared to \$97,000 when the PMC facility was in operation.



A visitor walking through Bayfront Park on the Little Traverse Wheelway